

**Orientation Briefing
on
DoD Modeling and
Simulation (M&S)
Policy &
Management**

Overview / Agenda

Background & Context

DoD Directive 5000.59 – the
Foundation for DoD M&S Policy and
Organization

DoD Executive Council for Modeling
and Simulation (EXCIMS)

DoD M&S Vision

M&S Progress

Technolog

**DARPA-ARMY
SIMNET Project
(1982-1990)**

Limited scope
simulations,
little focus on
interoperability before
1988

Distributed Wargaming
System (DWS) Exercise
ACE-89 (Nov '89)

**Distributed Interactive
Simulation (DIS) Standards
began (Spring 1990)**

New Joint M&S programs:
- Joint
Simulation System (JSIMS)

**Senate Armed
Svcs Committee (SASC) M&S Demo
(May '92)**

linking
Component
simulations

**(JMWARS)
DARPA
STOW-E
Project
(Nov '94)**

**High Level Architecture (HLA)
began - Architecture
Management Group formed
under MSWG to oversee
development**

**USAF
Distributed
Mission Training
(DMT)
Initiative
announced at
I/ITSEC (Dec
'97)**

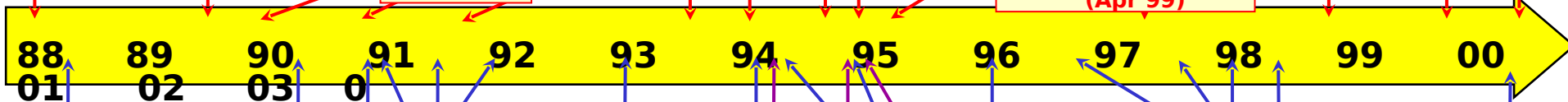
establishe
d (Sep
10, '96)

**NATO Partners for
Peace (PfP)
Simulation Game
(Apr '99)**

**USJFCOM Distributed Continuous
Exercise Environment (DCEE)
(Jul '03)**

**USJFCOM Exercise MILLENNIUM
CHALLENGE 2002 (MC 02) (Jul-Aug
'02)**

**HLA made IEEE
Standard 1516,
1516.1, &
1516.2 (Mar 9,
2001)**



**Defense Science
Board (DSB):
"Computer
Applications to
Training and
Wargaming," May
1988, study for
Chairman, Joint Chiefs
of Staff**

**M&S management
structure (Aug-Nov
1990)**

**"[M&S] Management
Plan" - forms
Executive Council for
M&S (EXCIMS),
establishes DMSO
(Jun 21 '91)**

**DepSecDef
approves DoD D
5000.59, "DoD
[M&S]
Management" (Jan
4 '94)**

**US
approves
EXCIMS
Charter (Oct
'92 EXCIMS
Mtg)**

**USD(A&T) Memo,
"Establishment of
the [DMSO]," (Jul
22, '91) form
office effective Jun
21 and places it
under DDR&E**

(Mar 12,
'92)

**Svc M&S
Mgt Ofcs in
place**

**USD(AT&L) approves
DoD 5000.59-P, "DoD
[M&S] Master
Plan" (Oct 25,
'95)**

**DoD Instruction 5000.61,
"DoD [M&S] Verification,
Validation & Accreditation
(DDI&A)" (Apr 28, '96)**

* DoD M&S Executive Agents

(MSEAs)

DIR, N I M A	Terrain	Apr 6 '95
SEC NAVY	Oceans	Apr 9 '96
SEC AIR FORCE	Air & Space	Apr 9 '96
DIR, D I A Foreign Forces + US National		Jul 12 '96

and Joint Intelligence Processes

**North Atlantic
Council approves
NATO M&S
Master Plan (Dec
'96)**

**USD(AT&L) approves
DoD 5000.59-M "DoD
[M&S] Glossary" (Jan
'98)**

**USD(AT&L)
approves HLA
MoA (Nov 3 '00)**

**USD(AT&L)
approves Revised
DoDI 5000.61
(May 13
'03)**

**DUSA(OR) -AF/CVA
Memo, "New
Vector for [DMSO]"
(Mar 9 '00)**

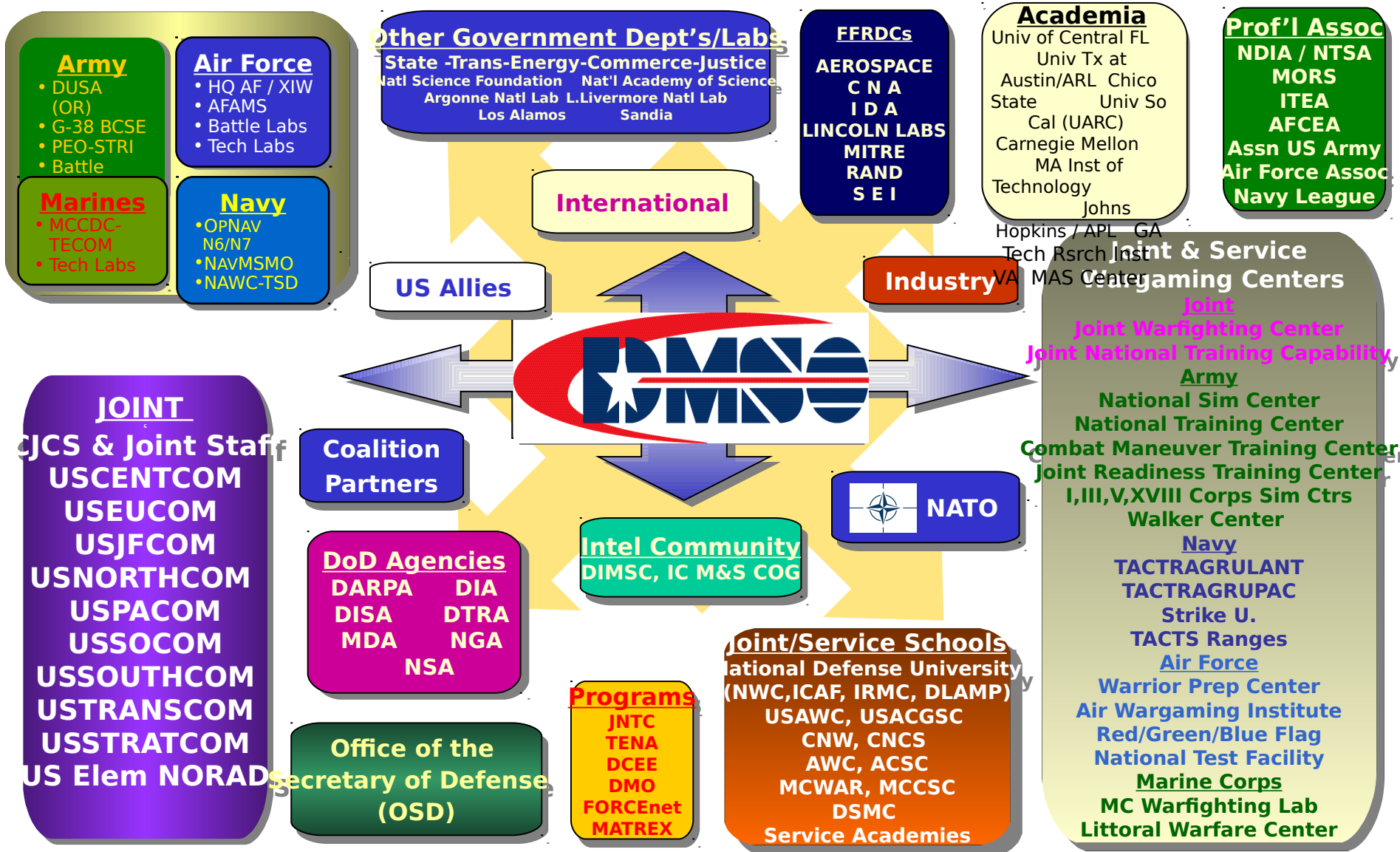
**SecDef designates USJFCOM
[then USACOM] as DoD
Executive Agent for Joint
Experimentation (Oct 1
'99)**

**No formal M&S
management**

Manag

basic structure in place

The M&S Arena



Foundation Document for DoD M&S: DoD Directive

5000.59 (1/4)

- **DoD Directive 5000.59, "DoD Modeling and Simulation Management" approved by DepSecDef**
- **ESTABLISHED:**
 - **DoD Executive Council for Modeling and Simulation (EXCIMS)**
 - **Defense Modeling and Simulation Office (DMSO)**
 - **M&S Management and Administrative Structure for improving M&S**
- **KEY POLICIES:**
 - **Required DoD Components to develop M&S Master and Investment Plans**
 - **Open system architecture and interoperability requirements**
 - **Established DoD M&S Executive Agents (MSEAs)**

Foundation Document for DoD M&S: DoD Directive

RESPONSIBILITIES: 5000.59 (2/4)

- **USD(AT&L)** is responsible for
 - "Strengthening the uses of M&S" in DoD
 - Establishing the EXCIMS and DMSO
 - Designating **DDR&E** to Chair the EXCIMS
 - DoD M&S policies, plans, and programs in coordination with DoD Components
 - Publishing the DoD M&S Master and Investment Plans in coordination with DoD Components

Foundation Document for DoD M&S: DoD Directive

• Responsibilities (CONT.): 5000.59 (3/4)

- **DoD Components** are responsible for:
 - Ensuring representation on the DoD EXCIMS and designating a single Point of Contact for M&S
 - Developing policies, plans, and programs to carry out M&S responsibilities according to their priorities
 - Publishing their own M&S Master and Investment Plans
 - Providing life cycle management of their M&S applications, standards, and databases
 - Establishing procedures for joint and

DoD Directive 5000.59--Foundation Document for DoD M&S (4/4)

DoD Components (CONT.)

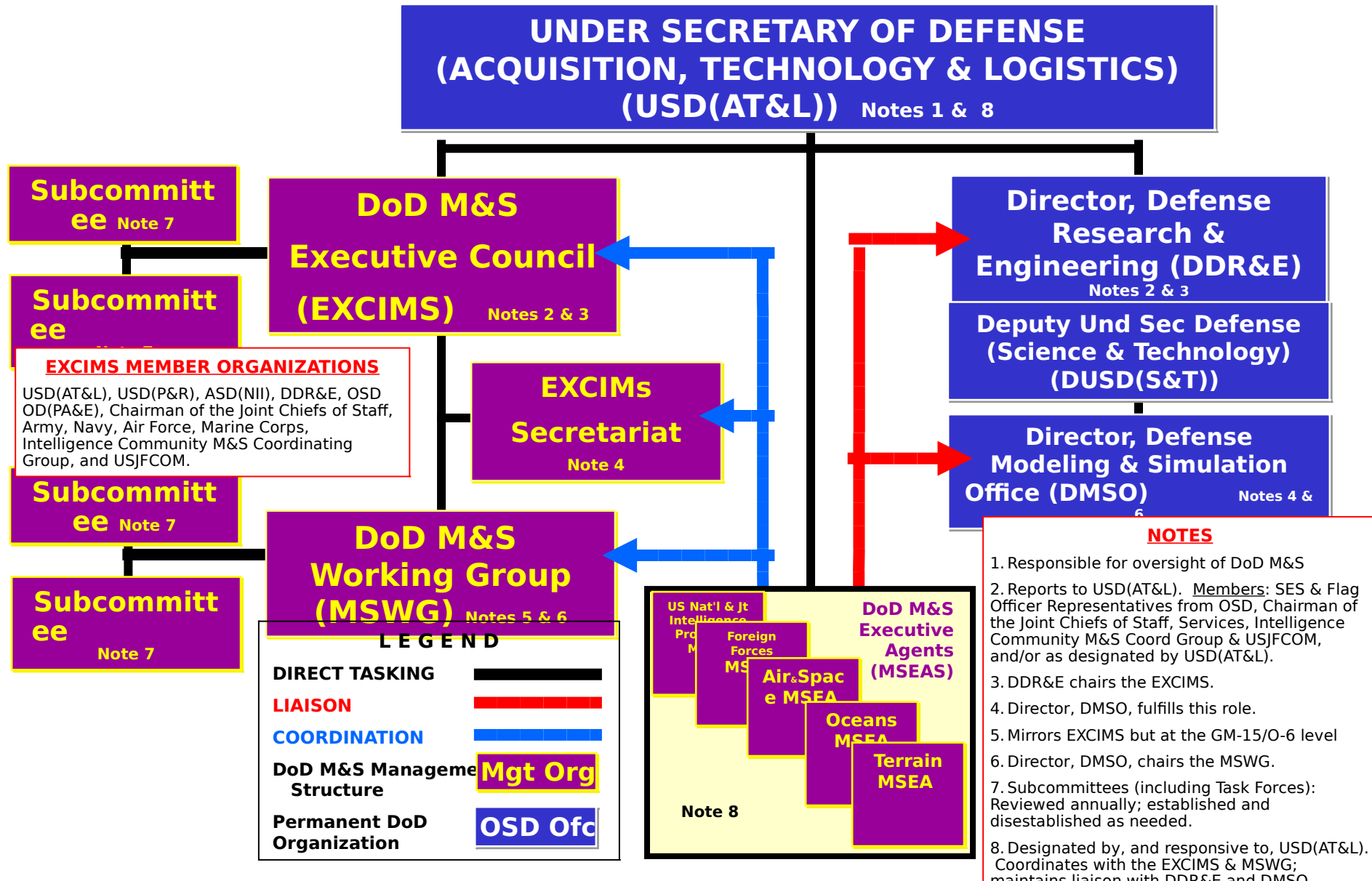
- **Assuming responsibility for managing DoD common- or general-use M&S applications if designated as DoD MSEA**
- **Establishing their own policies and procedures for Verification, Validation and Accreditation of their own M&S**
- **Be the final authority for validating and accrediting representations of its own forces and capabilities in joint and common use M&S.**

Foundation Document for DoD M&S: Charter for the DoD

EXCIMS

- **Originally Attachment 3 to Draft DoD Directive 5000.59 - removed because EXCIMS was established and operating before Directive was approved**
- **Approved by Acting USD(A) at the October 1991 EXCIMS Meeting**
- **Functions "captured" in DoDD 5000.59, but some key details omitted:**
 - **EXCIMS Required to meet twice annually**
 - **Specified membership by organization**
 - **Specified management and administrative details for formation of subcommittees**

DoD M&S Management Structure: Executive Council for M&S (EXCIMS)



DoD EXCIMS Functions

DoD Directive 5000.59 and the EXCIMS Charter define these functions:

- 1. Advise and assist the USD(AT&L) in strengthening DoD M&S uses**
- 2. Oversee development of DoD M&S policies, plans and programs**
- 3. Encourage coordination and communication among DoD M&S activities**
- 4. Identify M&S investments with high-value return in meeting requirements and filling gaps in DoD M&S capabilities**
- 5. Promote joint and cooperative research, development, acquisition and operation of DoD M&S systems, technologies and capabilities**
- 6. Recommend DoD M&S Objectives and investments**
- 7. Recommend designation of DoD MSEAs**

DoD EXCIMS Members

(as of 12-1-2004)

DoD Component/ Principal Staff Asst	Name	Title
DDR&E (Chair)	Hon. Dr. Ronald M. Sega	Director, Defense Research & Engineering/EXCIMS Chair
USD(AT&L)	Dr. Charles J. Holland	DUSD (Science & Technology)
USD(AT&L)	<i>Vacant (Mr. David V. Pauling ?)</i>	<i>ADUSD(MPP&R)?</i>
USD(AT&L)	Mr. Mark D. Schaeffer	Director, Defense Systems
USD(P&R)	Dr. Paul W. Mayberry	Deputy Under Secretary of Defense for Readiness
USD(I)	Thomas G. Behling	Deputy Under Secretary of Defense for Preparation & Warning
ASD(NII)	Dr. Ronald C. Jost	Acting Deputy Asst Sec Def for Policy, Programs & Space Prgrms
Dir(PA&E)	Mr. Eric J. Coulter	Deputy Director for Theater Assessments & Planning
Chairman, JCS	Ms. Lisa S. Disbrow	Joint Staff, J-8, Deputy Director, Force Management
Army	Mr. Walter W. Hollis	Deputy Under Secretary of the Army (Operations Research)

DoD MSWG Members (as of 1-11-2005)

Name	Organization
COL Jerry A. Glasow, USA *	DMSO
<i>Vacant *</i>	<i>OUSD(AT&L) ODUSD(MPP&R)?</i>
Mr. Fred Myers	OUSD(AT&L)(DS)
Mr. Fred Hartman *	OUSD(P&R)/ODUSD(R)
Dr. Dave Phillips *	OASD(NII)
COL Dan Hoskins, USA	OASD(RA)(RT&M)
Mr. Robert Butterworth	DOT&E
Mr. Donald Bates *	OSD OD(PA&E)
LTC William Scott, USA	CJCS (Joint Staff J-6I)
Mr. Andrew Kourkoutis *	CJCS (Joint Staff J-8)
Mr. William Duval *	Army/AMSO
Mr. John Moore *	Navy/NAVMSMO
Col Jesse J Citizen, USAF *	Air Force/HQ AF/XIWM
Capt Erik Jilson, USMC *	Marine Corps/MCMSMO
COL Michael P. Armstrong and Mr. Anthony Cerri	USJFCOM (J-7 & J-9 Co-Representatives)
Mr. Ian Snyder *	Intelligence Community
Mr. John W. Hiett	DIA/Intell MSEA
Mr. Lee Spencer	DISA/D8
MAJ Richard B. Jones , USA	DTRA
Mr. Richard Matlock	MDA/MS
Mr. Paul Foley	NGA/Terrain MSEA
Mr. Ed Weitzner	Ocean MSEA
Col Harold Elkins, USAF	Air/Space MSEA

* Voting Members

The DoD M&S Vision

Defense modeling and simulation will provide **readily available, operationally valid** environments for use by DoD components:

- To train jointly, develop doctrine and tactics, formulate operational plans, and assess war fighting situations.
- To support technology assessment, system upgrade, prototype and full scale development, and force structuring.

Furthermore, **common use** of these environments will promote a closer interaction between the operations and acquisition communities in carrying out their respective responsibilities. **To allow maximum utility and flexibility,**

Approved by the USD (A&T) March 13, 1992

**Reaffirmed by the DoD Executive Council for Modeling and Simulation (EXCIMS),
May 12, 1999**

BACKUPS

Definitions

Common-use M&S. M&S applications, services, or materials provided by a DoD Component to two or more DoD Components.

DoD Component. The Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff, the Combatant Commands, the Inspector General of the Department of Defense, the Defense Agencies, and the DoD Field Activities. (DoD Dir 5000.59, ¶ 2.1)

General-use M&S Applications. Specific representations of the physical environment or environmental effects used by, or common to, many models and simulations; e.g. terrain, atmospheric, or hydrographic effects.

Joint M&S. Abstract representations of joint and Service forces, capabilities, equipment, materiel, and services used in the joint environment or by two, or more, Military Services.

Source: DoD Directive 5000.59. "DoD Modeling and Simulation (M&S) Management," January 4, 1994

Definitions (2)

Modeling and Simulation (M&S) Investment Plan. A DoD plan, published under the authority of the USD(AT&L) and with the coordination of the DoD Components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) programs and funding for joint and common use M&S to achieve the specified goals and objectives outlined in the DoD M&S Master Plan. (DoD Dir 5000.59, E2.1.12)

Modeling and Simulation (M&S) Master Plan. A DoD plan, published under the authority of the USD(AT&L) and with the coordination of the DoD Components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) DoD goals and objectives for the application of M&S for joint and common use within the Department of Defense. It shall also include an assessment of current M&S capabilities, a status report on M&S efforts under development, and a road map that delineates the management, investment, and technical strategies required to achieve DoD M&S objectives. (DoD Dir 5000.59, E2.1.13)

DoD EXCIMS

Responsibilities

- **Strengthening the uses of Modeling & Simulation (M&S) in DoD**
- **Oversee development of DoD M&S plans, programs, policies, procedures**
- **Identify investments in M&S applications that have high-value return**
- **Promote joint and cooperative research, development, acquisition, and operation of M&S systems**
- **Recommend DoD M&S objectives and an investment strategy**
- **Recommend designation of "DoD M&S Executive Agent"**
- **Foster DoD M&S interoperability standards and protocols**

DoD Dir 5000.59, "DoD [M&S] Management," Para 5.1.4.

DMSO Reporting Chain

**Acting Under Secretary of Defense(Acquisition,
Technology & Logistics) (USD(AT&L))
Mr. Michael W. Wynne**

**Director, Defense Research & Engineering
(DDR&E)
Dr. Ronald M. Sega**

**Deputy Under Secretary of Defense (Science &
Technology) (DUSD(S&T))
Dr. Charles J. Holland**

**Director, Defense Modeling & Simulation Office
(DMSO)
COL Jerry A. Glasow, USA**